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Tuna Newsletter

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- Southwest Region
- Southwest Fisheries Science Center

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U.S. TUNA STATISTICS

Editor's note: The following articles were prepared by NMFS personnel from data and information gathered from sources in the U.S. tuna industry and government.

U.S. CANNED TUNA INDUSTRY HIGHLIGHTS, FOURTH QUARTER 1994

Total receipts of tuna by U.S. canners during the fourth quarter of 1994 (October-December) decreased by 7% to 114,800 short tons (st) of whole fish (round weight), compared to the fourth quarter of 1993 (Table 1). The principal species was skipjack tuna with 51% of the total, followed by albacore and yellowfin tuna, with 31% and 18% of the total, respectively. Albacore receipts were up by 30%, while skipjack and yellowfin tuna receipts were down by 12% and 32%, respectively.

Receipts of tuna for all four quarters of 1994 totaled 442,400 st, a 3% decrease from the previous year (Table 2). Albacore and yellowfin tuna receipts were up by 14% and 6%, respectively, while skipjack tuna receipts were down by 13%.

Although the vast majority of tuna received by U.S. canners is whole fish, some quantity is received as loins or gilled-and-gutted. Receipts of tuna loins for the fourth quarter of 1994 were down 58%, while receipts of loins for the year were down by only 7%. (The round weight totals used above were approximated by converting weights of loins and gilled-and-gutted receipts by factors of 2.25 and 1.11, respectively. For the remainder of this article, unconverted receipts are used unless otherwise stated.)

Table 1. Total U.S. cannery receipts (st) by species for the fourth quarters of 1993 and 1994. Totals may not add due to rounding.

Oct-Dec	Type	Albacore	Skipjack	Yellowfin[1]	TOTAL
1993	ROUND	27,600	49,000	21,300	97,800
	GILLED & GUTTED	*	0	1,300	1,300
	LOIN	0	7,900	3,100	11,000
	TOTAL (as received)	27,600	56,800	25,700	110,100
	TOTAL (round wt)[2]	27,600	66,600	29,800	124,000
1994	ROUND	36,000	50,300	17,900	104,100
	GILLED & GUTTED	0	0	300	300
	LOIN	0	3,700	1,000	4,600
	TOTAL (as received)	36,000	53,900	19,100	109,000
	TOTAL (round wt)[2]	36,000	58,500	20,300	114,800

*Less than 100 st reported for this category.

[1]May include a small amount of bigeye tuna.

[2]Converted to round weight by using factors of 1.11 for gilled-and-gutted and 2.25 for loins.

Table 2. Total U.S. cannery receipts (st) by species for the year 1993 and 1994. Totals may not add due to rounding.

Jan-Dec	Type	Albacore	Skipjack	Yellowfin[1]	TOTAL
1993	ROUND	97,900	212,700	80,000	390,500
	GILLED & GUTTED	*	*	3,100	3,200
	LOIN	700	19,400	7,400	27,600
	TOTAL (as received)	98,600	232,100	90,500	421,300
	TOTAL (round wt)[2]	99,500	256,400	100,200	456,100
1994	ROUND	113,500	187,900	82,100	383,500
	GILLED & GUTTED	*	*	1,000	1,000
	LOIN	100	15,400	10,100	25,600
	TOTAL (as received)	113,600	203,400	93,200	410,200
	TOTAL (round wt)[2]	113,700	222,700	105,900	442,400

*Less than 100 st reported for this category.

[1]May include a small amount of bigeye tuna.

[2]Converted to round weight by using factors of 1.11 for gilled-and-gutted and 2.25 for loins.

Table 3. U.S. cannery receipts (st) of domestic and imported tuna by species for the fourth quarters of 1993, 1994 and the recent (1989-93) fourth quarter averages. Totals may not add due to rounding.

Oct-Dec	Source	Albacore	Skipjack	Yellowfin[1]	TOTAL
		AMERICAN SAMOA & CALIFORNIA			
1993	DOMESTIC	2,600	26,700	6,500	35,800
	IMPORTED	6,200	9,300	6,000	21,500
	TOTAL	8,800	36,000	12,500	57,300
1994	DOMESTIC	3,700	27,600	6,700	38,000
	IMPORTED	9,200	5,200	1,000	15,400
	TOTAL	12,900	32,800	7,700	53,300
1989-93 Average	DOMESTIC	1,000	24,200	9,800	35,000
	IMPORTED	5,300	8,300	4,600	18,200
	TOTAL	6,400	32,500	14,300	53,200
		PUERTO RICO			
1993	DOMESTIC	*	3,500	4,100	7,600
	IMPORTED	18,800	17,300	9,100	45,200
	TOTAL	18,800	20,800	13,200	52,800
1994	DOMESTIC	3,000	10,400	4,000	17,400
	IMPORTED	20,100	10,700	7,400	38,300
	TOTAL	23,100	21,200	11,400	55,700
1989-93 Average	DOMESTIC	300	8,400	6,200	14,900
	IMPORTED	16,800	16,200	8,600	41,500
	TOTAL	17,000	24,600	14,800	56,500
		TOTAL			
1993	DOMESTIC	2,600	30,200	10,700	43,400
	IMPORTED	24,900	26,600	15,100	66,600
	TOTAL	27,600	56,800	25,700	110,100
1994	DOMESTIC	6,700	38,000	10,700	55,400
	IMPORTED	29,300	16,000	8,400	53,600
	TOTAL	36,000	53,900	19,100	109,000
1989-93 Average	DOMESTIC	1,300	32,700	16,000	49,900
	IMPORTED	22,100	24,500	13,100	59,800
	TOTAL	23,400	57,200	29,200	109,700

*Less than 100 st reported for this category.

[1]May include a small amount of bigeye tuna.

Receipts of tuna by U.S. canners in American Samoa and California for the fourth quarter of 1994 were down by 7%, compared to the fourth quarter of 1993, with decreases in yellowfin and skipjack tuna overshadowing a 47% increase in albacore receipts (Table 3). Total receipts in Puerto Rico were up by 5%, with increases in albacore and skipjack tuna receipts more than offsetting a decrease in yellowfin tuna receipts.

Total domestic deliveries to U.S. canners for 1994 decreased by 6%, while imported deliveries increased by 1% (Table 4). Skipjack tuna was easily the largest component of all domestic deliveries at 138,800 st, followed by yellowfin tuna, 50,400 st, and albacore, 11,600 st. Domestic deliveries accounted for 49% of the tuna received by U.S. canners.

Albacore was the leading import for the fourth quarter of 1994 at 29,300 st, followed by skipjack and yellowfin tuna at 16,000 st and 8,400 st, respectively (Table 5). The leading non-U.S. supplier was Taiwan, with 44% of the import market, followed by France and Japan, with 19% and 12% of the market, respectively. The western Pacific Ocean was the main source of all three important tuna species (Table 6): skipjack tuna (43,300 st), yellowfin tuna (13,800 st) and albacore (13,600 st).

Contract prices for domestically caught tuna delivered to U.S. canners in the fourth quarter of 1994, normally announced by the American Tuna Sales Association, were not available at press time. It has been reported that one major canner no longer intends to negotiate a monthly price with the ATSA, but will buy fish on a "spot" or load basis with prices negotiated accordingly. Another canner has continued to negotiate prices through the ATSA with its contract boats, but the ATSA will not announce these prices.

Table 4. U.S. cannery receipts (st) of domestic and imported tuna by species for 1993, 1994 and the recent (1989-93) averages. Totals may not add due to rounding.

Jan-Dec	Source	Albacore	Skipjack	Yellowfin[1]	TOTAL
1993	DOMESTIC	7,500	156,200	49,300	213,000
	IMPORTED	91,100	75,900	41,200	208,200
	TOTAL	98,600	232,100	90,500	421,300
1994	DOMESTIC	11,600	138,800	50,400	200,900
	IMPORTED	102,000	64,600	42,800	209,300
	TOTAL	113,600	203,400	93,200	410,200
1989-93 Average	DOMESTIC	6,500	129,300	69,400	205,200
	IMPORTED	89,000	96,400	52,400	237,900
	TOTAL	95,500	225,700	121,800	443,100

[1]May include a small amount of bigeye tuna.

Table 5. U.S. cannery imports (st) of tuna by species and source (flag of catcher vessel) for the fourth quarter of 1994. Totals for the fourth quarter of 1993 are given for comparison. Note that the flag of the catcher vessel does not necessarily reflect the country of export or point of shipment. Totals may not add due to rounding.

VESSEL FLAG	1994				1993
	Albacore	Skipjack	Yellowfin[1]	TOTAL	TOTAL
CANADA	200	0	0	200	0
ECUADOR	100	500	500	1,100	1,500
FSM	0	2,300	200	2,500	1,300
FRANCE	300	6,600	3,400	10,300	11,500
GHANA	0	700	0	700	5,900
JAPAN	6,400	*	*	6,400	6,800
PANAMA	1,100	100	0	1,200	2,100
PORTUGAL	200	0	0	200	1,200
SOLOMONS	0	700	100	900	1,400
SOUTH AFRICA	500	0	0	500	300
SOUTH KOREA	900	1,900	300	3,100	2,500
TAIWAN	19,200	1,000	3,700	23,800	21,900
TONGA	200	0	0	200	100
VENEZUELA	0	400	0	400	1,200
UNKNOWN	*	1,300	*	1,300	1,100
OTHER	100	500	200	900	7,800
TOTAL	29,300	16,000	8,400	53,600	66,600

*Less than 100 st reported for this category.
[1]May include a small amount of bigeye tuna.

U.S. imports of canned tuna packed in water totaled 35,700 st for the fourth quarter of 1994, down 17% from 1993. For the entire year of 1994, imports of canned tuna stood at 119,900 st, up 11% from the previous year.

U.S. TUNA FISHERIES UPDATE

EASTERN PACIFIC TROPICAL TUNA FISHERY

During the period January through March 1995, six U.S. tuna purse seiners participated in the eastern tropical Pacific tuna fishery and caught an estimated 4,200 metric tons (mt) of yellowfin and bigeye tuna and 3,000 mt of skipjack tuna (Figure 1). The combined yellowfin and bigeye tuna catch was down 15% from the 1994 catch for the same period while the skipjack tuna catch was down 12%. The drop in catches in 1995 is largely due to a decrease in the size of the U.S. fleet which consisted of 11 active seiners during the same period in 1994. The fleet continues to concentrate its effort on tunas not associated with dolphins.

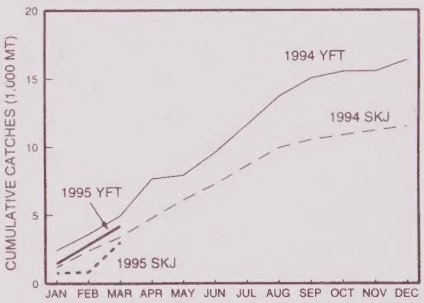

Figure 1. Cumulative tuna catches, by month, for the U.S. eastern Pacific purse seine fishery, 1994 and 1995.

WESTERN PACIFIC TROPICAL TUNA FISHERY

During 1994, 47 U.S. tuna purse seiners registered to fish in the western tropical Pacific under the South Pacific Tuna Treaty landed an estimated 134,000 mt of skipjack tuna and 58,700 mt of yellowfin and bigeye tuna (Figure 2). The skipjack tuna landings were down 11% from the 1993 landings and the combined

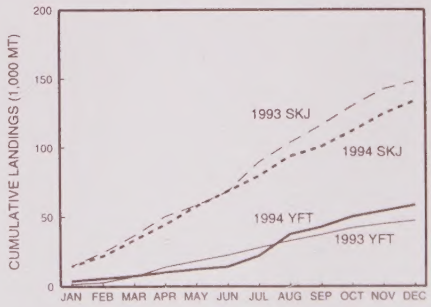

Figure 2. Cumulative tuna landings, by month, for the U.S. western tropical Pacific purse seine fishery, 1993 and 1994.

Table 6. Receipts (st) of tuna by U.S. canneries by species and area of capture for the fourth quarters of 1993 and 1994. Totals may not add due to rounding.

SOURCE	Albacore		Skipjack		Yellowfin[1]	
	1993	1994	1993	1994	1993	1994
E. ATLANTIC OCEAN						
DOMESTIC	0	0	0	0	0	0
IMPORTED	6,700	7,200	9,200	400	3,700	*
TOTAL	6,700	7,200	9,200	400	3,700	*
W. ATLANTIC OCEAN						
DOMESTIC	0	0	0	200	0	0
IMPORTED	3,200	3,500	1,200	600	100	100
TOTAL	3,200	3,500	1,200	800	100	100
E. PACIFIC OCEAN						
DOMESTIC	2,400	6,600	4,200	1,800	5,100	1,200
IMPORTED	0	300	2,000	1,000	900	700
TOTAL	2,400	6,900	6,200	2,800	6,000	1,800
W. PACIFIC OCEAN						
DOMESTIC	200	100	26,000	35,900	5,600	9,600
IMPORTED	11,100	13,500	8,100	7,400	5,800	4,300
TOTAL	11,300	13,600	34,100	43,300	11,400	13,800
INDIAN OCEAN						
DOMESTIC	0	0	0	0	0	0
IMPORTED	3,900	4,800	6,100	6,700	4,600	3,400
TOTAL	3,900	4,800	6,100	6,700	4,600	3,400

*Less than 100 st reported for this category.
[1]May include a small amount of bigeye tuna.

Table 7. U.S. commercial landings of Atlantic bluefin tuna for 1994.

Category	# of Fish	Avg. Wt. (lbs.)	Gross Wt. (mt)	Quota (mt)
GENERAL	0	-	0.0	531
Handline	0	-	0.0	
Rod & Reel	0	-	0.0	
Harpoon	0	-	0.0	
HARPOON	0	-	0.0	53
INCIDENTAL	43	453	8.8	113
N. Longline	7	332	1.1	23
S. Longline	35	484	7.7	86
Other	1	235	0.1	4
PURSE SEINE	0	0	0.0	301
RESERVE	8	364	1.3	18
TOTAL	51	439	10.2	1,016

yellowfin and bigeye tuna landings were up 24%. *(Report provided by Doug Prescott, NMFS Southwest Fisheries Science Center, La Jolla, CA)*

SOUTH PACIFIC ALBACORE FISHERY

The 1994-95 U.S. South Pacific albacore fishery got underway in late December. Participation in the fishery remains at a low level this season with approximately 14 vessels in the fishery. Poor catches in recent years and reports of El Niño type conditions in the western Pacific have prompted many U.S. troll vessels to forgo the South Pacific albacore season. However, preliminary reports indicate that a successful season is underway. Most of the U.S. vessels have already unloaded a second time. Catch rates have been reported in the 1,000 fish per day range, with consistent daily catches of 500 fish. Average size is reported to be larger than normal. Total landings for the 1994-95 season are expected to greatly surpass the previous season's total of just over 600 mt. *(Report provided by John Childers, NMFS Southwest Fisheries Science Center, La Jolla, CA)*

WESTERN ATLANTIC BLUEFIN TUNA FISHERY

As of March 17, 51 large Atlantic bluefin tuna have been harvested by federally permitted vessels under the 1995 quota. Forty-three of the fish were harvested under the Incidental Catch category, 42 of them by longline and one by rod-and-reel. The average weight of these fish is up slightly from that of fish harvested at this time last year. Eight fish have been harvested for scientific purposes by the New England Aquarium under the Reserve Category quota. A summary of U.S. Atlantic bluefin tuna landings for all commercial categories for 1994 is given in Table 7. *(Report provided by Kevin B. Foster, NMFS Northeast Region, Gloucester, MA)*

HAWAII TUNA FISHERY

Preliminary data show that in 1994 commercial landings of tuna in Hawaii totaled 5,100 mt with an ex-vessel value of $31.4 million (Figures 3 and 4). The 1994 landings were down 11% in weight but up 4% in value from the 1993 totals (5,700 mt and $30.3 million). Bigeye tuna was the major species in the 1994

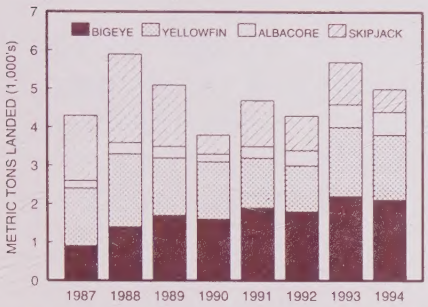

Figure 3. Commercial tuna landings in Hawaii, by species, 1987-1994.

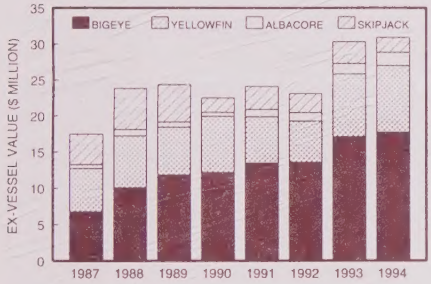

Figure 4. Ex-vessel value of tuna landings in Hawaii, by species, 1987-1994.

landings at 2,100 mt valued at $17.7 million, followed by yellowfin tuna (1,700 mt and $9.3 million). The longline segment (the principal gear employed) of the 1994 commercial pelagics fleet consisted of 125 vessels that made a total of 11,034 sets, compared to 123 vessels and 12,322 sets in 1993. *(Data provided by Samuel Pooley, NMFS Southwest Fisheries Science Center, Honolulu, HI)*

REPORTS

Editor's note: Original reports are published as a service to subscribers and may not represent the views of the NMFS. Readers should contact the authors of reports for details, if needed.

ENVIRONMENTAL REGULATIONS AND TECHNICAL EFFICIENCY: THE CASE OF TUNA-DOLPHIN FISHING

Sam Herrick[1], Dale Squires[1] and Kjell Salvanes[2]

Government regulations that address environmental problems may affect the technical efficiency of firms in an industry. Technical efficiency is a measure of a firm's ability to produce relative to the best firms in the industry, that is relative to the industry's "best-practice frontier." New regulations cause firms to alter their use of labor, capital, energy, natural resources and other factor inputs in the production process. The changes required to comply with regulations often lower technical efficiency. To the extent that firms adapt to new regulations, technical efficiency may return to or exceed pre-regulatory levels. In the long term, environmental regulations may induce firms to invest in research and the development of new, more efficient and "environmentally friendly" production technologies.

The impact of environmental regulations on firms' technical efficiency has been given relatively little consideration. In view of this, the authors investigated the impact of the U.S. dolphin safe policy on technical efficiency in the U.S. eastern tropical Pacific (ETP) purse seine tuna fishery. The data used in this study were records of individual sets from 34 U.S. purse seiners that operated in the ETP during one or more years during 1987-1991. The period 1987-1991 was chosen because it includes both the pre- and post-regulatory periods for regulations implementing U.S. dolphin safe policy.

Under the U.S. tuna processors dolphin-safe policy, enacted in April of 1990, U.S. processors stopped buying tuna from suppliers who could not certify that the tuna was "dolphin safe." This decision essentially precluded purchases of any tuna caught using the predominant strategy of fishing on dolphins because some incidental dolphin mortality is unavoidable when engaging in "dolphin fishing." In response to the dolphin-safe policy, U.S. tuna fishermen switched to two alternative, dolphin-safe, purse seine fishing strategies. In one, vessels set their purse seines around pure schools of tuna which are sighted at the surface, a strategy known as "school fishing." In the other alternative, called "log fishing," the purse seine is set around logs or other floating debris (natural or man-made) to catch tuna often associated with them. All three purse seine fishing strategies--the third being setting on dolphin-associated tuna schools--involve the same basic gear and operational techniques, and can be conducted during the same fishing trip.

A fishing vessel's technical efficiency is a measure of its ability to produce relative to the best-practice frontier in the fishery. The best-practice frontier is the maximum output (tuna production) possible from a given set of factor inputs (fuel, labor, etc.) and production technology (radar, purse seine, etc.). Technical efficiency for an individual vessel is basically measured as the difference between its output and the corresponding output at the

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best-practice frontier. If a vessel is not technically efficient, then it is likely that its production can be increased through better use of the existing technology (e.g., changes in the way nets are deployed).

The best-practice frontier used in this study was assumed to include a random component in order to capture the positive and negative effects of factors, such as weather, that are beyond the control of vessel operators. The more technically efficient vessels are, the closer they will be to the best-practice frontier, and the difference between their production and the best practice frontier will be small.

The best-practice frontier for purse seine operators was estimated using regression analysis. An index of yellowfin and skipjack catch was regressed on the following factor inputs: (1) short tons of hold capacity, a measure of capital stock; (2) effort, the number of hours spent searching for tuna between sets; (3) sea surface temperature, to reflect variation in the availability of tuna and fluctuations in the ocean environment over time; (4) a variable indicating whether or not helicopters were used for locating tuna and herding dolphins; (5) variables for the type of set (dolphin, school or log); and (6) a variable for the year in which the set took place.

The regression results indicated that, for the purse seine fishery as a whole, observed output was significantly less than the best practice frontier due to technical inefficiency rather than random factors such as weather beyond vessel operators' control. These findings suggest that there is some scope for expanding production and raising technical efficiency in the U.S. fleet as a whole by improving fishing techniques.

The impact of the dolphin-safe policy on the U.S. ETP tuna fishery was assessed by investigating changes in technical efficiency for the three different purse seine fishing strategies before and after the policy was enacted. It was found that prior to the dolphin-safe policy, year-to-year differences in technical efficiency were nonexistent or minimal, and following the onset of the dolphin-safe policy, year-to-year differences in technical efficiency increased significantly.

We hypothesized that the technical efficiency of vessels fishing continuously during 1987-1991 might be unaffected by dolphin-safe policy because of greater fishing skills. In contrast, vessels that entered and exited the fishery might have been less efficient and affected by dolphin-safe policies to a greater extent because these vessels would have less opportunity to hone their fishing skills.

For the fleet as a whole, and for vessels that did not fish continuously, we found that technical efficiency decreased slightly after dolphin-safe was implemented. Declines were small, probably because vessels were already using dolphin-safe fishing strategies. For vessels that fished continuously, there were no declines in technical efficiency and evidence for a small increase in technical efficiency for dolphin sets. These results suggest that vessels fishing continuously may have anticipated the dolphin-safe standard in 1989-90 and began to make adjustments before the policy was implemented.

The study's main result was that changes in technical efficiency after the introduction of the dolphin-safe policy were small. This result is consistent with studies of other industries that indicate environmental regulations (e.g., pollution controls) generally have had only modest effects on firm productivity. It may be that firms adapt to regulations unless environmental regulations require firms to substantially alter production practices or investments. If industry is forewarned about impending environmental regulations, as in the case of dolphin safe, adjustments can often be made to diminish the impact of regulations on technical efficiency and hence costs to the industry.

An abstract from a recently published paper written by a SWFSC scientist is presented in this space to announce its availability and to report results of tuna research conducted by Center staff.

RECENT SWFSC PUBLICATION: "BASIC CONCEPTS RELEVANT TO HEAT TRANSFER IN FISHES, AND THEIR USE IN MEASURING THE PHYSIOLOGICAL THERMOREGULATORY ABILITIES OF TUNAS"

R. W. Brill[1], H. Dewar[2] and J. B. Graham[2]. 1994. Environmental Biology of Fishes, 40:109-124.

Aerobic heat production and heat loss via the gills are inexorably linked in all water-breathing teleosts except tunas. These processes are decoupled in tunas by the presence of fascular counter-current heat exchangers, and sustained muscle temperatures (that is, steady state) may exceed water temperature by 10°C or more in larger individuals. The presence of vascular counter-current heat exchangers is not clearly advantageous in all situations, however. Mathematical models predict that tunas could overheat during strenuous activity unless the efficacy of vascular heat exchangers can be reduced and that they may be actively limited in warmer waters. Tunas may likewise be forced out of potentially usable habitats as they grow because they have to occupy cooler waters. Vascular counter-current heat exchangers also slow rates of heating and cooling. A re-

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duced rate of muscle temperature decrease is clearly advantageous when diving into colder water to chase prey or avoid predators. A reduced rate of heat gain from the environment would be disadvantageous, however, when fish return to the warmer surface waters. When subjected to changes in ambient temperature, tunas cannot defend a specific body temperature and do not thermoregulate in the mammalian sense. Yet when appropriately analyzed, data taken under steady state and non-steady state conditions indicate that tunas are not strictly prisoners of their own thermoconserving mechanisms. They apparently can modify overall efficiency of their vascular counter-current heat exchangers and thus avoid overheating during bouts of strenuous activity, retard cooling after diving into colder water, and rapidly warm their muscles after voluntarily entering warmer. The exact physiological mechanisms employed remain to be elucidated.

RECENT DEVELOPMENTS IN TUNA FISHERIES

Editor's note: The following news items, compiled from fishery trade and industry journals, newspapers and NMFS reports, are provided only as a service to our readers. The NMFS does not guarantee their accuracy.

UNITED STATES

U.S.-Japan Consultative Committee on Fisheries--The U.S.-Japan Consultative Committee on Fisheries held its third annual meeting January 11-12, 1995, in Tokyo. The two sides exchanged views on a broad range of issues in the U.S.-Japan fisheries relationship. Topics discussed included Pacific and Atlantic tunas. The delegations finalized a press release announcing the formation of an interim science committee to promote scientific cooperation on tuna and tuna-like species in the North Pacific Ocean. The two sides agreed to meet at a fourth meeting in the U.S. at a time to be mutually decided. (NMFS, January 27, 1995)

UNICORD to Sell Bumble Bee-- UNICORD Public Co. Ltd., a Thai tuna canner, signed a letter of intent the week of February 20, 1995, to sell its subsidiary in the U.S., Bumble Bee Seafoods Inc. UNICORD is the world's largest tuna canner with a capacity of 18 million cases per year. The company made headlines in 1989 when it acquired Bumble Bee for $285 million from Grand Metropolitan Co. Ltd. The takeover was billed as the largest Thai investment overseas. Bumble Bee has nearly a 25% share of the U.S. canned tuna market. UNICORD exported about 5 million cases to the U.S. last year. (NMFS, March 1, 1995)

WESTERN PACIFIC

Japan Bluefin Cage Culture-- Scientists from Kinki University have worked on breeding and rearing bluefin tuna in cages since the 1970s. Despite initial setbacks, the program has shown steady progress. Fresh bluefin tuna grown to about 30 kg in the cages are being sold at markets in Tokyo and Osaka at a wholesale price of about $61 per kg. The higher price of cage-reared bluefin, compared to wild caught fish, is due to a greater fat content. The tuna are cultured in 30-meter by 30-meter cages in a water depth of about 25 meters at the University's Ohshima Experimental Station near Kushimoto. Researchers are still working on a breeding program; currently the fish for the cages are caught as 100-300 gm juveniles in trawl operations. (INFOFISH *Trade News*, February 3, 1995)

EASTERN PACIFIC

Mexican Peso Crisis Affects Fishing Industry--Mexican press reports indicate that the country's current economic crisis is having an impact on the fishing industry. The most immediate impact has been the decision of the state oil monopoly (PEMEX) to raise diesel prices by more than 40 percent. Diesel now reportedly sells for more in Mexico than in U.S. ports. The currency devaluation has caused interest rates to double to over 50 percent annually. Fishermen and companies marketing their product domestically face serious financial problems because of the fuel price increases, interest rate hikes, and other consequences of the peso devaluation. One of the major fisher-

UPCOMING TUNA MEETINGS

(Organizer; meeting type: sci=science, adm=administration, com=commercial)

- May 14-17. 46th Tuna Conference. Lake Arrowhead, CA. (Inter-American Tropical Tuna Commission & National Marine Fisheries Service; sci).
- JUN 13-15. Annual Meeting of the Inter-American Tropical Tuna Commission. La Jolla, CA. (IATTC; adm)
- SEP 25-29. 6th Expert Consultation on Indian Ocean Tunas. Colombo, Sri Lanka. (Indo-Pacific Tuna Program; sci)
- OCT 9-13. Standing Committee on Research and Statistics, Plenary Meeting, International Commission for the Conservation of Atlantic Tunas. Madrid, Spain. (ICCAT; sci)
- OCT 25-27. 4th INFOFISH World Tuna Trade Conference. Manila, The Philippines. (INFOFISH; com)
- NOV 10-17. ICCAT Annual Meeting. Madrid, Spain. (ICCAT; adm)

ies which will be affected is the eastern tropical Pacific tuna purse seine fishery. Almost all of the ETP catch is canned and marketed domestically. (NMFS from *Excelsior*, January 8, 1995)

EASTERN ATLANTIC

Heinz Upgrades Canning Capacity in Ghana--The Heinz group has upgraded the tuna-canning capacity of its Tema, Ghana, plant to 30,000 mt. Heinz activities in Ghana will enable it to control its purchases of tropical tuna and avoid the European Union's 24% customs duty because Ghana enjoys duty-free status under the Lome Convention. The cannery will supply Heinz Europe in the UK market initially, and eventually, Germany. (INFOFISH *Trade News*, February 15, 1995)

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